

REMARKS

The application has been reviewed in light of the Office Action mailed on April 21, 2005. Claims 12 and 18 have been amended, and claims 16 and 20 have been cancelled. New claims 26 and 27 have been added. No new matter has been added. Applicants reserve the right to pursue the pre-amended claims in this and other applications.

The Office Action notes that the last reference listed on the IDS filed with the application – U.S. Patent No. 5,558,097 – does not appear to relate to the subject matter of the application. Applicants thank the Examiner for pointing the inconsistency. Form 1449A contains a typographical error, and the reference should read U.S. Patent No. 6,558,097, to Mallet et al. Since this was an inadvertent typographical error, Applicants ask the Examiner to make a correction on the Form 1449A and consider the reference.

Claims 7 and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fluckiger, U.S. Patent No. 6,068,303 (“Fluckiger”). This rejection is respectfully traversed for the following reasons.

Claim 7 recites a “screw comprising: a shank having a tip at one end and a head at the other end; a thread on said shank; [and] a knurled portion on said shank disposed between said thread and said head.” The knurled portion is an important feature of the invention of claims 7 and 11. For example, paragraph [0034] of the specification discloses as follows:

Knurling is generally accomplished by a knurling tool, which under pressure creates a surface pattern by metal displacement. Generally, knurling is a method of squeezing the metal hard enough to cause plastic movements of metal into peaks and troughs. It is usually produced by forcing a knurling die into the surface of a rotating part, and displacing material from the original diameter. With reference to the knurled portion 18 in FIG. 2, the

troughs of the knurled portion 18 are represented by solid lines and the peaks are represented by squares or diamonds between the solid lines. The radial height of the peaks over the troughs represents the coarseness of the knurled portion 18. In use, and as described in greater detail below, the knurled portion 18 cuts and grinds the cement board when the screw 1 is rotated.

The claimed “knurled portion” can be formed by other processes. Fluckinger does not teach or suggest a screw having a “knurled portion” configuration. The Office Action asserts “a knurl (at 6) is provided between the thread and the head” on the Fluckinger screw. This assertion is a mischaracterization of Fluckinger’s disclosure. The Fluckinger screw does not have a “knurl.” Rather, element 6 is “an anchoring section 6 with five ring-like projections 7, with the projections 5, 7 being coaxial and spaced apart from one another.” Col. 2, lines 12-14. With reference to Figures 1 and 3, it is clear that Fluckinger’s element 6 is not a “knurled portion” and does not have intersecting troughs. Rather, it is an anchoring section having spaced-apart rings along the shaft of the screw. The spaced-apart rings of Fluckinger’s anchoring section 6 cannot, arbitrarily, be compared to the claimed “knurled portion.” For at least this reason claim 7 is allowable over Fluckinger.

Moreover, claim 7 recites “at least one flute in said knurled portion.” As discussed in paragraph [0036] of the specification, for example, the “flute 24 is essentially a channel or a groove.” Fluckinger fails to teach or suggest this limitation. The Office Action asserts that the Fluckinger screw “includes a flute (8).” Office Action, page 2. Element 8 in Fluckinger is not a “flute,” but rather a notch provided in each of the ring-like projections 7. Moreover, Fluckinger fails to teach “at least one flute in said knurled portion” since it has no knurled portion, as discussed above. These are additional reasons why claim 7 is allowable. Claim 11 depends from claim 7 and should be allowed for at least the same reasons as for allowance of claim 7.

Claims 12, 14 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Searelle, U.S. Patent No. 877,131 (“Searelle”). Reconsideration is respectfully requested for the following reasons.

Claim 12 recites a screw comprising a “shank having a tip at one end and a head at the other end, said head having a lower surface.” Claim 12 has been amended to recite that the “lower surface of said head further comprises a circumferential lip.” An exemplary embodiment of this feature is shown as element 34 in Figure 3 of the disclosure. Searelle fails to teach or suggest this limitation. The lower surfaces of the head of Searelle’s screw, as shown in Figure 3, comprise “grooves 9 along the lower edge of the head” and “blunt points 10 acting to check the further inward movement of the screw.” Thus, the Searelle screw does not have, and fails to teach or suggest, a “circumferential lip” formed on the “lower surface of said head.” For at least this reason amended claim 12 distinguishes over Searelle.

Claims 14 and 17 depend from claim 12 and are allowable for at least the same reasons as for allowance of claim 12, and for other reasons. For example, claim 17 recites the “screw of claim 12 further comprising a transition section disposed between said thread and said at least one flute.” Searelle clearly fails to teach or suggest this limitation, and the Office Action does not assert otherwise. This is an additional reason for allowance of claim 17.

Claims 1, 3-8, 10-17, 24 and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Searelle in view of Jones, U.S. Patent No. 471,179. Reconsideration is respectfully requested.

Claim 1 recites a “knurled portion on said shank ...; [and] at least one flute in said knurled portion.” This is a significant innovation of the invention. As described and illustrated in paragraphs [0036] and [0037] and associated Figures of the specification, the “screw 1 also has a flute 24 formed in the knurled portion 18. ... The flute 24 runs through

the knurled portion 18, and generally has a length sufficient to extend the flute at least from one end of the knurled portion 18 to the other. ... In use, ... the flutes 24 function to move particles formed by the knurled portion 18 as the screw 1 is inserted into a cement board. The flutes 24 also provide cutting surfaces to aid the knurled portion 18 in cutting the cement board to prepare the cement board for seating of the screw 1.”

Searelle and Jones, taken alone or in combination fail to teach or suggest this limitation. The Office Action admits that “Searelle does not disclose a knurled portion between the thread and head.” Office Action, page 3. However, the Office Action asserts that it would have been obvious to:

provide the shank of Searelle with a knurled portion as disclosed in Jones in order to provide the screw of Searelle with a securement means to prevent slipping during rolling of the threads (see pg. 2, l. 11-20 in Jones). The “positive lock” as described in Jones would improve the rolling of the threads in Searelle by preventing the unwanted slipping of the rolling dies.

This rejection is traversed because: (1) there is no reason or motivation to make the proposed combination; (2) the proposed modification would render the Searelle screw unfit for its intended function.

Initially, no motivation exists to form a knurled portion, as in Jones, in the screw of Searelle. The Office Action’s proposed motivation – “to prevent unwanted slipping of the rolling dies” – is entirely unreasonable. If there was indeed a reason or motivation for such a modification, then most screws existing in the market place would have such a knurled portion. Such is not the case. Forming of a knurled portion on screw would be done for a specific function of the screw. This is the case in Jones, where a knurled portion is formed on the screw to create a “reamer,” to “ream out the hole left by [the] threaded body and form a cylindrical hole that will be filled by the shank that reamed it.” Lines 97-100.

There is absolutely no reason or motivation to form a knurled reamer portion of Jones on the screw of Searelle. The entire length of the Searelle screw is formed with grooves 4 that are “cut spirally across the threads” and “are extended up onto the underside of the head.” Lines 33-40. In use, the “grooves permit the head of the screw to seat itself flush with the surface of the wood.” Lines 59-60. Searelle is specific in that its screw is self-sufficient for its designed purpose: “The form of the screw as described cuts its own way into the wood the grooves filling up with the saw dust and every thread of the screw embedding itself in the wood.” Lines 77-78. Thus, there is absolutely no purpose for adding a knurled portion to Searelle’s screw. To add a knurled portion would preclude the grooves of Searelle from extending along the length of its screw, as required for its function. A proposed modification cannot change the principle operation of a reference. MPEP 2143.01. For at least these reasons, the proposed combination and modification are improper.

Moreover, the claimed limitation requires a specific spatial arrangement between the knurled portion and the flute. Claim 1 specifically recites “at least one flute in said knurled portion.” Nothing in the references, taken alone or in combination, teaches or suggests this limitation. This is an additional reason why the rejection should be withdrawn.

For at least the foregoing reasons, claim 1 is allowable. Claims 3-6 depend from claim 1 and should be allowed for at least the same reasons as for allowance of claim 1, and for other reasons.

Claim 7 recites “a knurled portion on said shank disposed between said thread and said head; and at least one flute in said knurled portion.” As discussed above with respect to claim 1, claim 7 is allowable. Claim 8, 10 and 11 depend from claim 7 and contain every limitation of claim 7, and should be allowed for the same reasons as for allowance of claim 7, and for other reasons. For example, claim 10 recites that the “head has a lower surface and a circumferential lip on said lower surface.” Searelle and Jones, taken alone or in combination,

fail to teach or suggest this limitation, and this is an additional reason for allowance of claim 10.

Claim 12 recites a “screw comprising: a shank having a tip at one end and a head at the other end, said head having a lower surface, wherein said lower surface of said head further comprises a circumferential lip.” Claim 12 further recites “at least one flute on said shank disposed between said thread and said head; and at least one rib on said lower surface of said head.”

Initially, neither Jones nor Searelle teaches or suggests, whether taken alone or in combination, that a “lower surface of said head further comprises a circumferential lip.” The Office Action asserts that Searelle discloses “a circumferential lip (9).” Office Action, page 3. As discussed above, Searelle fails to teach or suggest this limitation. The lower surfaces of the head of Searelle’s screw comprise “grooves 9 along the lower edge of the head” and “blunt points 10 acting to check the further inward movement of the screw.” Thus, the Searelle screw does not have, and fails to teach or suggest, a “circumferential lip” formed on the “lower surface of said head.” For at least this reason claim 12 distinguishes over Searelle, and Jones does not remedy this deficiency of Searelle.

Moreover, claim 12 recites “at least one rib on said lower surface of said head.” The Office Action asserts that Searelle teaches “a rib (7) on a lower surface of the head.” Applicants respectfully disagree. With reference to Figures 1-3 of Searelle, it is evident that no ribs are formed on the lower surface of its head. The written disclosure of Searelle, likewise, does not teach or suggest that a rib is formed on the lower surface of its head. Element 7, to which the Office Action refers, is described as “a plain portion” located “[b]etween the reticulated surface and the threaded body.” Lines 32-35. Thus, Searelle fails to teach or suggest “at least one rib on said lower surface of said head,” and Jones fails to remedy this deficiency of Searelle. This is another reason why claim 12 is allowable.

Claim 13-17 depend from claim 12 and should be allowed for at least the same reasons as for allowance of claim 12, and for other reasons. For example, claim 15 recites a “second rib different from said at least one rib, said second rib extending from said lower surface of said head to a neck on said head.” The cited references, whether taken alone or in combination, fail to teach or suggest this limitation, and the Office Action does not contend to the contrary. This is another reason for allowance of claim 15.

Claim 24 is a method claim that recites “providing a screw shank having ... a knurled portion with at least one flute, and ... producing particles by rotation of said knurled portion in said particle producing material.” Claim 24 further recites the step of “transporting at least some of said produced particles from said particle producing material via said at least one flute.”

The Office Action asserts that “[o]nce the combination [of Searelle and Jones] was made, the skilled artisan would have recognized to use the screw in particle board and polymer or bulging material because those materials are well know[n] for screw attachment and therefore when screw [is] inserted in those materials the result of the particle and bu[l]ge displacement would be inherent since the structure is the same as that claimed.”

Initially, this rejection is traversed because, as discussed above, Searelle and Jones cannot be properly combined to teach or suggest “providing a screw shank having ... a knurled portion with at least one flute.” Moreover, the method step of “transporting at least some of said produced particles from said particle producing material via said at least one flute” clearly distinguishes over the references. This method step is neither taught nor suggested by anything in the cited references, whether taken alone or in combination. The Office Action’s rejection under a broad assertion that such a step would somehow be “recognized” is not supported by the MPEP. The MPEP is clear regarding the requirements for establishing prima facie obviousness: the references must teach or suggest all the claim

limitations, and the examiner bears the burden to establish the same. MPEP §§ 2142, 2143. In this case, the requirement has not been met, and the rejection of claim 24 should be withdrawn.

Claim 25 is also a method claim, reciting “providing a screw shank having a ... knurled portion ...; [and] providing a bulge producing material.” The method further recites “producing a bulge on a surface of said bulge producing material by rotation of said thread into said bulge producing material; [and] displacing said bulge into said bulge producing material via said knurled portion.” For reasons similar to those discussed above with respect to claim 24, prima facie obviousness has not been established, and the rejection of claim 25 should be withdrawn.

Claims 2 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Searelle in view of Jones or Searelle alone as applied to claims 1 and 12 above, and further in view of Koing, U.S. Patent No. 5,772,379 (“Koing”). Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fluckiger or Searelle in view of Jones as applied to claim 7 above, and further in view of Farrell, U.S. Patent No. 4,653,244 (“Farrell”). These rejections are respectfully traversed because they are based on improper rejections of base claims of dependent claims 2, 9 and 15. As discussed above, base claims 1, 7 and 12 are allowable, and claims 2, 9 and 15 dependent therefrom, respectively, are also allowable. Moreover, the Applicants do not agree with the improper combinations proposed by the Office Action.

Claims 18, 19 and 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Koing. Reconsideration is respectfully requested for the following reasons.

Claim 18 has been amended to recite “a knurled portion on said shank disposed between said thread and said head, and at least one flute in said knurled portion and extending onto at least a portion of said thread.” Jones and Koing, whether taken alone or in combination, fail to teach or suggest this claim limitation. For at least this reason, amended claim 18 is allowable. Claims 19 and 21-23 depend from claim 18 and should be allowed at least for the same reason, and for other reasons.

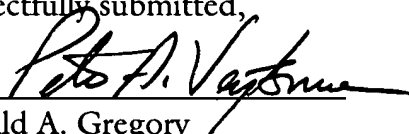
Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Koing as applied to claim 18, and further in view of Searelle. Claim 20 has been cancelled. Moreover, as discussed above, Jones and Searelle are not properly combinable under the guidelines of the MPEP.

In view of the above, Applicants believe the pending application is in condition for allowance.

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